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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Poul Erik Braad

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PEARNE & GORDON LLP
1801 EAST 9TH STREET
SUITE 1200
CLEVELAND, OH 44114-3108

EXAMINER

O HERN, BRENT T

ART UNIT

PAPER NUMBER

1783

MAIL DATE

DELIVERY MODE

10/04/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/572,190	Applicant(s) BRAAD, POUL ERIK	
	Examiner BRENT T. O'HERN	Art Unit 1783	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11-19, 21-44 and 46-54 is/are pending in the application.
- 4a) Of the above claim(s) 4-9, 30, 37, 39-44 and 46-49 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 11-19, 21-29, 31-36, 38 and 50-54 is/are rejected.
- 7) ☒ Claim(s) 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims

1. Claims 1-9, 11-19, 21-44, and 46-54 are pending with claims 4-9, 30, 37, 39-44 and 46-49 withdrawn.

WITHDRAWN OBJECTIONS

2. All objections of record in the Office action mailed 6/7/2010 have been withdrawn due to Applicant's amendments in the Paper filed 9/7/2010.

WITHDRAWN REJECTIONS

3. All rejections of record in the Office action mailed 6/7/2010 have been withdrawn due to Applicant's amendments in the Paper filed 9/7/2010.

NEW OBJECTIONS

Claim Objections

4. Claim 21 is objected to because of the following informalities: amended independent claim 1 states the thickness of the film layer is between 0 mm and 1 mm, however, dependent claim 21, line 2 states the thickness of the film layer is about 25 μm or more without any upper limit. One of ordinary skill in the art would understand that the upper limit is 1 mm based on claim 1. Applicant is advised to amend claim 21 to include an upper limit of 1 mm for completeness. Appropriate correction is required.

NEW REJECTIONS

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-3, 11-19, 21-29, 31-36, 38, and 50-54 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

7. The phrases “wherein said armouring layers are bonded to neither said polymer layer nor said film layer, and said armouring layers are not bonded to each other” in claim 1, lines 14-16, claim 50, lines 7-9, claim 51, lines 10-12, claim 54, lines 9-11 are new matter as the disclosure as filed does not have support for these negative limitations.

Claim Rejections - 35 USC § 103

8. Claims 1-3, 11-19, 21-29, 31-36, 38, and 50-54 are rejected under 35 U.S.C. 103(a) as obvious over Glejbol et al. (WO 01/51839) in view of Hardy (US 5,514,312) and Procida et al. (US 2001/0021426).

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Glejbol ('839) teaches a flexible unbonded pipe (See Abstract, FIG-1, p. 1, ll. 15-20.)

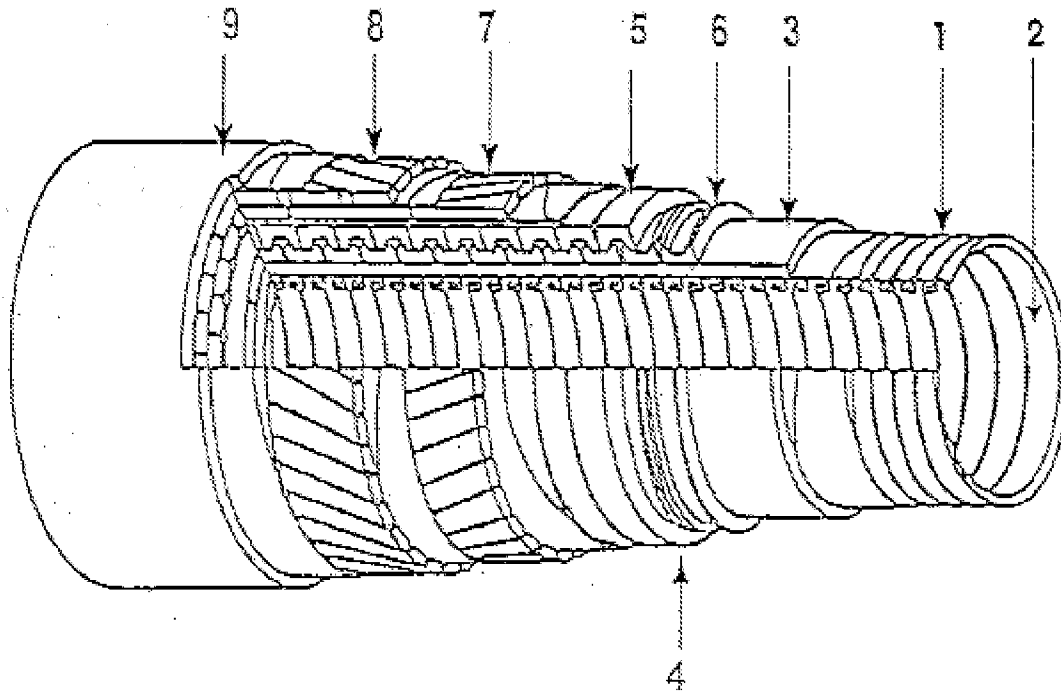


Fig 1

usable for the transport of oil from offshore oil wells to installations on the surface of the sea where the oil is refined, or sent further for processing (See p. 1, ll. 26-30.) wherein the pipe is resistant against crushing of the inner liner as a consequence of the pressure of the surroundings and provides reinforcement and protection against the damaging effects of gases which emanate through the inner liner of the pipe (See p. 3, ll. 4-8.) comprising at least one polymer layer and a film layer (See p. 8, ll. 4-12, FIGs 1-2, inner multilayer liner #3.),

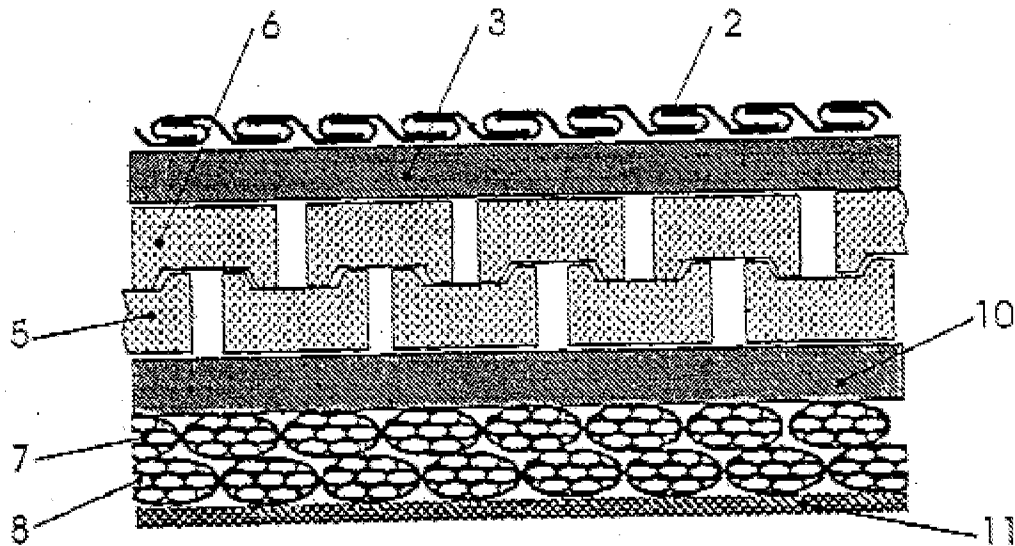


Fig 2

one or more armouring layers (See p. 6, ll. 8-28 and FIG-2, #5 and #6.) and an inner carcass layer (See FIG-1, #1.) wherein the polymer layer is bonded to the film layer by chemical or physical bonds (See p. 6, ll. 4-12, FIGs 1-2, inner multilayer liner #3 wherein the layers are extruded on the outside of one another. This extrusion is interpreted as creating chemical and/or physical bonds between the polymer/film layers.) wherein the liner/polymer layer are made from polymers including polyolefins, polyamides, polyketones, fluorous polymers (See p. 5, ll. 25-29.) wherein the armouring layers are bonded to neither the polymer layer nor the film layer, and the armouring layers are not bonded to each other (See Abstract, FIGs 1-2, p. 1, ll. 15-20. This lack of bonding is by definition the characteristic of unbonded pipe as taught by Glejbol ('839).), however, fails to expressly disclose the at least one polymer layer having a thickness of 4 mm or more, at least one film layer having a thickness of greater than 0 mm and 1

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mm or less, and said polymer layer being at least 10 times as thick as the film, wherein the film layer has a thickness of about 25 μm or more, the film layer providing a fluid permeation barrier against one or more or all of the fluids methane, hydrogen sulphides, carbon dioxides and water, which is higher than the fluid permeation barrier provided by the polymer layer determined at 50 °C and a pressure difference of 50 bar, the bonding between the polymer layer and the film layer is stronger than the internal bondings in one of the polymer layer and the film layer, and all interface bondings including bondings between layers of the film and bonding between the polymer layer and the film layer, are stronger than the internal bondings in one of the polymer layer and the film layer, the interface bonding(s) is/are stronger than the internal bonding of the polymer layer, the interfacial bonding between the polymer layer and the film layer is sufficiently strong to prevent creation of gas pockets between the layers when subjected to an increased carbon dioxides pressure on the film side of the pipe, the bonding between the polymer layer and the film layer has a peel strength using ASTM D3330 of at least 300 N/m, the bonding between the polymer layer and the film layer is stronger than the cohesive forces in one of the polymer layer and the film layer measured by 90° peel test, the film layer provides a fluid permeation barrier against at least one of the fluids selected from methane, hydrogen sulphides, carbon dioxides and water, which is at least 50% higher than the fluid permeation barrier provided by the polymer layer determined at 50 °C and a pressure difference of 50 bar, the film layer is essentially impermeable to at least one of the fluids selected from hydrogen sulfides, methane, and carbon dioxide, at a partial pressure for the respective fluid on a first side of the layer of

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at least 0.03 bars measured at about 50 °C and a pressure difference of 50 bar, the film layer is essentially impermeable to H₂O, measured at about 50 °C and a pressure difference of 50 bar, the film layer is essentially impermeable to hydrogen sulfides at a partial pressure of at least 0.03 bars at a temperature of about 25 °C and a pressure difference of 50 bar, the film layer is essentially impermeable to methane at a partial pressure of at least 1 bar at a temperature of about 25 °C and a pressure difference of 50 bar, the film layer is essentially impermeable to carbon dioxide, at a partial pressure of at least 1 bar at a temperature of about 25 °C and a pressure difference of 50 bar, the polymer layer being bonded to said film layer, and the interfacial bonding between the polymer layer and the film layer being sufficiently strong to prevent creation of gas pockets between the layers when subjected to an increased carbon dioxide pressure of 5 bar on the film side of the pipe, the bonding between the polymer layer and the film layer has a peel strength using ASTM D3330 of at least 300 N/m, wherein the polymer layer comprises cross-linked polyethylene (XLPE), the surface of the film facing the polymer layer comprises a primer, wherein the innermost polymer layer of the two polymer layers being PVDF and the polymer layer on the in radial direction outermost of the two polymer layer is cross-linked polyethylene (XLPE), wherein the innermost polymer layer of the two polymer layers is cross-linked polyethylene (XLPE), the film layer is in the form of a tape wound around an innermost polymer layer, the film layer is in the form of a tape folded around an innermost polymer layer, the polymer layer being thicker than said film layer, said film layer being a wounded or folded film layer and wherein the polymer layer is bonded to the film layer via one or more bondings

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comprising at least one of the chemical bondings selected from the group of ion bondings and covalent bondings.

Hardy ('312) teaches a flexible impervious unbonded pipe usable for offshore oil production installations and being subject to severe chemical and temperature conditions (*See FIG-3, pipe #11 and col. 14, ll. 12-42, col. 1, ll. 10-38, col. 5, l. 53 to col. 6, l. 4, col. 24, ll. 17-34.*) the pipe comprising at least one polymer layered and at least one film layer (*See col. 14, ll. 12-42, col. 5, l. 53 to col. 6, l. 4 and FIG-3, pipe #11 with multiple plastic and metal reinforcement layers 12-17 secured to each other and usable for sub-sea drilling.*) the polymer layer having a thickness of 4 mm or more/(between 4 and 20 mm) (*See col. 20, ll. 20, 37, 45-46, where the thickness of the inner layer is between 5 and 10 mm with the outer layers individually or in combination of sublayers being of greater thickness since they are structural layers.*), wherein the polymer layer comprises polyolefins or polyamides (*See col. 14, ll. 12-42, col. 1, ll. 10-38 and col. 25, ll. 12-30.*), wherein the polymer layer comprises cross-linked polyethylene (XLPE) (*See col. 14, ll. 12-42, col. 1, ll. 10-38 and col. 5, ll. 53-65.*) wherein the film layer has a thickness of about 25 μm or more (*See col. 20, ll. 20, 37, 45-46, where the thickness is between 6 and 10 mm.*), wherein the film layer is the innermost layer of the film layer and the polymer layer (*See col. 14, ll. 12-42 and FIG-3, pipe #11 with innermost layer #12.*) wherein the film layer comprises C atoms, the polymer being a cross-linked polymer with bondings linking to the C atoms of the film layer (*See col. 14, ll. 12-42 where the film layer is cross-linked PE with C atoms.*).

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Procida ('426) teaches a flexible offshore oil and gas unbonded multilayer pipe (*See FIG-1, #1 and paras. 1, 41-45 where the pipe is made from layers having different composition as well as sublayers with the same composition.*) where the inner liquid impervious barrier layer made from polyethylene polyolefins, PVDF or polyamides that is resistant to blistering (*See FIG-1, #3 and paras. 33 and 37.*), reinforcement layer (*See FIG-1, #4.*), tensile reinforcement layer (*See FIG-1, #5.*), metal wires (*See FIG-1, #6.*) and outer sheath (*See FIG-1, #7.*) for the purpose of providing a flexible pipe with low permeability to H₂S and CO₂ that is suitable for transporting oil and gas from offshore fields (*See paras. 1 and 52.*). Procida's ('426) multilayer flexible long unbonded pipe is also made of the same generic structure, polymeric materials and other materials that are usable and functional in off shore application and subject to the same conditions as Applicant's invention, such as elevated pressures and temperatures, marine conditions, chemicals, etc. associated with sub-sea drilling operations. The polymeric structure can be thicker or thinner, with sublayers, depending on the contemplated use. It would have been obvious that Procida's ('426) 2 mm film is similar to a 1 mm film when compared to a pipe having a diameter of 508 mm. In both cases the ratio is less than 1%. It would have been obvious to provide a thickness as thin as possible to reduce costs and materials as long as the film layer is effective. There are not any good reasons to have a layer that is thicker than necessary and wastes materials/resources. The methods of manufacturing including various cross-linking, heating systems and exposure times vary depending on how the product is used and the compositions and thicknesses of the layers. The layers can be coextruded, extruded into or onto other layers or prepared

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individually and subsequently united. Thus, because of the above variable and differing formulations, the bonding strengths and relative bonding strengths vary accordingly.

Procida's ('426) multilayer flexible long unbonded pipe is bonded to a liquid impervious barrier layer for the purpose of providing a flexible pipe with low permeability to H₂S and CO₂ that is suitable for transporting oil and gas from offshore fields (*See paras. 1 and 52.*).

Therefore, it would have been obvious to a person having ordinary skill in the art with Glejbol ('839), Hardy ('312) and Procida ('426) before them to provide the claimed unbonded pipe with the claimed properties in order to provide a flexible unbonded pipe having the above properties that is suitable for offshore piping.

ANSWERS TO APPLICANT'S ARGUMENTS

9. In response to Applicant's arguments (*See pp. 18-21 of Applicant's Paper filed 9/7/2010.*) regarding Hardy as a primary reference, it is noted that said reference is no longer cited as a primary reference, thus, said arguments are moot.

10. In response to Applicant's arguments (*See p. 18 of Applicant's Paper filed 9/7/2010.*) regarding the objections and rejections, it is noted that the amendments overcome said objections and rejections.

11. In response to Applicant's arguments (*See pp. 18-21 of Applicant's Paper filed 9/7/2010.*) regarding the 35 USC 102 rejections, it is noted that the amendments overcome said rejections.

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12. In response to Applicant's arguments (*See p. 19, para. 3 of Applicant's Paper filed 9/7/2010.*) regarding the new limitations added to the independent claims, it is noted that said limitations are discussed above.

13. In response to Applicant's arguments (*See pp. 19-20 of Applicant's Paper filed 9/7/2010.*) that Hardy and Procida do not teach the type of bonding between the polymer and film layer, it is noted as discussed above that Glejbol is cited for teaching the claimed type of bonding between said layers.

14. In response to Applicant's arguments (*See p. 20, para. 3 of Applicant's Paper filed 9/7/2010.*) that one of ordinary skill in the art would not interpret a film that is approximately 2 mm to include a film of about 1 mm, it is noted that said arguments are not persuasive. The Examiner concurs that Procida does not expressly disclose a film having a thickness of 1 mm, however, as discussed about these thicknesses are very similar in the context of a pipe having a diameter of 508 mm. It would have been obvious to provide a thickness as thin as possible to reduce costs and materials as long as the film layer is effective. There are not any good reasons to have a layer that is thicker than necessary and wastes materials/resources.

15. In response to Applicant's arguments (*See p. 21 of Applicant's Paper filed 9/7/2010.*) that the dependent claims and the other independent claims are allowable, it is noted that no further precise arguments are set forth.

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRENT T. O'HERN whose telephone number is (571)272-6385. The examiner can normally be reached on Monday-Thursday, 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brent T O'Hern/
Examiner, Art Unit 1783
September 14, 2010

/David R. Sample/
Supervisory Patent Examiner, Art Unit 1783